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REMARKS

This communication is submitted in response to the Office Action of October 23, 2003.

Claims 15-20 and 22-24 are pending in the subject application with claims 15-18 being amended and claim 21 being canceled herewith. Claims 1-14 have previously been canceled from the subject application. Claims 22-24 have been added herewith.

The specification has been amended to identify the parent application by its U.S. patent number.

Reconsideration of the subject application is respectfully requested in view of the foregoing amendments and the following remarks.

The rejection of claim 21 under 35 U.S.C. §112, second paragraph, is moot in view of the cancellation of claim 21. Newly presented independent claim 22 corresponds essentially to claim 21 rewritten in independent form and amended to overcome the rejection under 35 U.S.C. §112, second paragraph. Since claim 21 was not rejected on the basis of prior art, it is submitted that independent claim 22 should be allowable.

The rejection of claim 15 as being anticipated by Spofford et al, the rejection of claims 15-18 as being anticipated by Hirsch et al, and the rejection of claims 18-20 as being unpatentable over Hirsch et al are respectfully traversed for the following reasons.

Independent claim 15 recites "forming a hollow tubular shaft from a first material having a rigidity to resist bending and to maintain a passage through the shaft when the ventilation tube is placed in an anatomical structure; and forming a flange by molding

the flange onto the hollow tubular shaft using a second material having a rigidity less than that of the first material to permit the flange to deform in response to contact with the anatomical structure." Independent claim 15 requires the flange to be formed by molding the flange onto the hollow tubular shaft, and Spofford et al does not teach or suggest this feature. Spofford et al explicitly discloses that the ends of tube members 102 and 104 are slid into counter bores 155 and 156 of the flange 106 and are fixedly attached to the flange 106 via a solvent bond applied to the ends of the tube members 102 and 104 prior to insertion of the ends in the counter bores (column 17, lines 48-62). Sliding insertion of the ends of the tube members 102 and 104 into the counter bores 155 and 156 of the flange 106 clearly does not involve forming the flange 106 by molding it onto either of the tube members 102 or 104. The arrangement contemplated by Spofford et al requires that tube members 102 and 104 and the flange 106 all be pre-formed and then assembled together. This is in contrast to the claimed invention which requires forming the flange by molding the flange onto the hollow tubular shaft. Accordingly, the rejection of claim 15 as being anticipated by Spofford et al is clearly improper, and independent claim 15 is submitted to be patentable over Spofford et al.

Hirsch et al disclose a tube 20 and a retaining element 24 on the tube 20. The tube 20 has a tubular section 36 which is placed in an anatomical structure. The retaining element 24 comprises petaloid flanges 27, 28 and 29 and connecting portions 30, 31 and 32 between next adjacent flanges. Hirsch et al further disclose that the petaloid flanges and the tubular section 36 may be insert molded together (column 4, lines 58-62). Hirsch et al disclose the petaloid flanges 27, 28 and 29 as having a higher durometer, i.e. 50-80 durometer, than the tubular section 36, which is disclosed as

having a lower durometer, i.e. 30-40 durometer. Accordingly, Hirsch et al fails to teach the steps of forming recited in independent claim 15 which require that the flange be formed of a second material having a rigidity less than the first material of which the hollow tubular shaft is formed. In addition, Hirsch et al fail to teach or suggest forming the petaloid flanges by molding the flanges onto the tubular section 36. The Examiner asserts in the Office Action that Hirsch et al's reference to insert molding for the petaloid flanges 27, 28 and 29 and tubular section 36 inherently teaches the features of the claimed invention, and the assertion made by the Examiner is considered to be improper. Attached herewith is a description of insert molding obtained from the website of Microplastics, Inc. From this description, it can be seen that insert molding involves connecting discrete parts by combining them into a single component through the injection of thermoplastic around the parts. When applied to the petaloid flanges 27, 28 and 29 and the tubular section 36 of Hirsch et al, insert molding would involve joining the pre-formed petaloid flanges to the pre-formed tubular section 36 by injecting thermal plastic around the pre-formed parts. In relying upon the theory of inherence, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. Ex parte Levy, 17 USPQ 2d 1461 (Board of Patent Appeals and Interferences 1990). The explanation of insert molding provided herein and its application to the teachings of Hirsch et al establish that the steps recited in claim 15 do not necessarily flow from the teachings of the applied prior art, but could only be arrived at with impermissible conjecture and hindsight relying on the teachings of the present invention. There are absolutely no teachings or suggestions whatsoever

in Hirsch et al of the step of forming the petaloid flanges 27, 28 and 29 by molding the flanges onto the tubular section 36. The rejection of claim 15 as being anticipated by Hirsch et al is clearly improper, and it is submitted that independent claim 15 is patentable over Hirsch et al.

Claims 16-20 depend from independent claim 15 and are submitted to be allowable therewith. With respect to dependent claims 16-18, these claims cannot be considered anticipated by Hirsch et al since Hirsch et al fails to teach or suggest formation of the petaloid flanges 27, 28 and 29 by molding the petaloid flanges onto the tubular section 36. Claims 18-20 cannot be considered obvious over Hirsch et al except with the use of impermissible hindsight reconstruction using the present invention. Accordingly, claims 16-20 are submitted to be clearly patentable over Hirsch et al for the additional features recited therein as well as being allowable with independent claim 15.

As noted above, independent claim 22 corresponds essentially to dependent claim 21 rewritten in independent form. Since claim 21 was not rejected on the basis of prior art, it is submitted that independent claim 22 should be allowed.

Independent claim 23 relates to the features of placing the hollow tubular shaft formed from the first material in a cavity of a mold in which a portion of the cavity unoccupied by the shaft has a configuration of a flanged end portion of the ventilation tube, and forming the flanged end portion of the second material by supplying the second material to the unoccupied portion of the cavity to form the flanged end portion molded onto the hollow tubular shaft. As pointed out above, Spofford et al does not contemplate forming the flange 106 molded onto either of the tube members 102 or

104, and Hirsch et al does not teach or suggest forming the petaloid flanges 27, 28 and 29 by molding the petaloid onto the tubular section 36. Accordingly, independent claim 23 is submitted to be clearly patentable and should be allowed along with dependent claim 24.

In light of the foregoing, all the claims in the subject application are submitted to be in condition for allowance. Action in conformance therewith is courteously solicited. Should any issues in the subject application remain unresolved, the Examiner is encouraged to contact the undersigned attorney.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on January 23, 2004.

Ann L. Shebovsky

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Insert Molding Engineered for Quality

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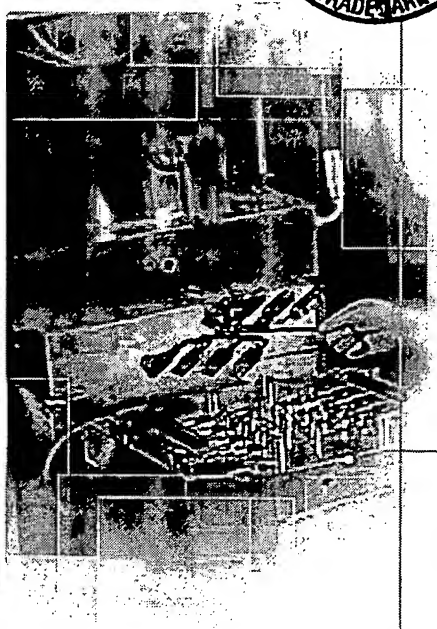


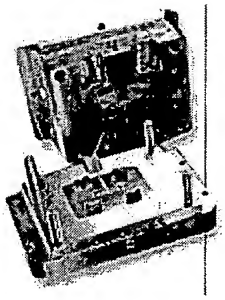
What is Insert Molding?

Insert molding is a highly efficient process by which metal stampings, bushings, electromechanical parts, filtration materials, and other discrete parts are combined into a single component through the injection of thermoplastic around the carefully placed parts (inserts).

What are the steps to insert molding?

1. A custom-built mold is loaded with inserts. Inserts may be loaded robotically or manually.
2. Molten plastic is injected into the mold.
3. Upon cooling, the mold opens and the components are removed.
4. Components are separated from the sprues and inspected.
5. Post-molding assembly can include a variety of secondary operations, such as:

    - Die cutting of stampings into discrete circuits
    - Bonding
    - Microsoldering
    - Circuit testing



An insert mold includes pins that support the inserts while thermoplastic is being injected.

How can insert molding help me improve my next component?

Insert molding can be a highly efficient alternative to the assembly of discrete parts using soldering, connectors, fasteners, or adhesives. Its benefits over such methods include:

- **Reduced assembly and labor costs**
  Because insert molding joins numerous components with thermoplastic, assembly and labor costs are greatly minimized. For example, a single stamping can be overmolded, then perforated to create multiple circuit

paths.

- **Reduced size and weight**
  By eliminating fasteners and connectors, and by combining the physical strength of resin and metal inserts, insert molding yields smaller and lighter components.
- **Increased reliability**
  With every part tightly secured in thermoplastic, an insert molded component prevents part loosening, misalignment, improper terminations, and other problems. The thermoplastic resin also provides improved resistance to shock and vibration.
- **Increased design flexibility**
  Designers appreciate the virtually unlimited configurations that insert molding allows. For example, in creating a 3D circuit board, overmolding permits circuitry to move freely through the part, from inside to outside, up walls, down in holes-and the plastic ties it all together.

To learn more about the insert molding process, see our How We Work and Plant Tour sections. And for examples of cost-efficient solutions we've provided, see our Applications section.

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